

HIGHLIGHTS



Highlights

Drinking Water

Indicator	Key Findings	Current Status
Public drinking water systems	Some 3.5 million Kentuckians are served by 656 public drinking water systems. During 1999, 316 systems had violations of drinking water rules.	No significant change during the past several years with nearly half of the water systems having one or more violations of drinking water rules. A majority of the violations (76 percent) were cited at 240 small plants (serving less than 3,300) for failure to properly monitor or report findings.
Public drinking water quality	Trends reveal that violations of health-based drinking water standards have been declining during the past 15 years. During 2000, 30 of the 656 systems had violations of drinking water Maximum Contaminant Level (MCL) standards.	Gaining ground with the continued decline in the number of violations of drinking water MCL standards and a reduction in the number of systems that are persistent violators of MCL standards (1997 - 27 systems serving 38,799 customers compared to 2000 - 15 systems serving 8,713 customers).
Boil water notices/advisories	The number of boil water advisories continue to increase in Kentucky due to better reporting and monitoring. During 2000, 546 boil water advisories and 10 boil water notices were issued due to contamination.	Losing ground with boil water notices doubling between 1997 and 2000 primarily due to the deterioration of the state's drinking water infrastructure and line breaks allowing for the infiltration of contaminants.
Private water wells	Some half a million Kentuckians depend on water wells, cisterns and other sources of drinking water. During 1999, 62 percent of the 2,346 water wells sampled by local health departments had potential contamination problems.	Losing ground in 1999 with more than half of the water wells sampled having potential contamination problems and the general lack of testing and maintenance of private water wells.
Public drinking water infrastructure	An estimated \$2.8 billion is needed during the next 20 years to expand, upgrade and replace drinking water infrastructure in Kentucky.	Gaining ground in 2001 with the capitalization of the \$46 million state drinking water revolving loan fund and approval of \$22.16 million in loans to fund 15 drinking water infrastructure projects.

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Water Resources

Indicator	Key Findings	Current Status
Stream and river quality	Kentuckians enjoy 89,431 miles of rivers and streams. During the past 25 years, progress has been made in restoring water quality with 34 percent of monitored waterways impaired by pollution in 1997-99, compared to 71 percent in 1972.	No significant change since 1995 with about one-third of monitored waterways impaired by pollution.
Lake quality	There are an estimated 2,271 lakes in Kentucky. One in three of the 106 public lakes assessed in 1999 was impaired by pollution.	Losing ground with addition of 7 lakes to the list of impaired public lakes, bringing the total up to 40 in 1999 compared to 33 in 1997. The increase in lake pollution is linked to the drought.
Groundwater quality	Kentucky established a groundwater monitoring network in 1995. Varying levels of pesticides and other contaminants have been detected in wells and springs sampled.	No significant change with relatively few water samples of the 260 wells and springs tested exceeding health advisory or drinking water standards.
Fish consumption advisories	Chemicals are increasingly being detected in fish. In 2000, an advisory was issued for all waterways after mercury was detected in fish.	Losing ground with the addition of two fish consumption advisories in 2000, bringing the state total to 8.
Wastewater treatment	In 1999, 55 percent of the state's households were connected to one of the 3,608 wastewater treatment plants. In 1999, water quality rules were violated at 1,896 plants.	Gaining ground in 1999 with 152 fewer wastewater treatment plants in violation of regulatory requirements compared to 1997.
Onsite sewage	In 1999, 22,435 onsite sewage permits were issued, 30 percent more than 1998. That year, 4,000 onsite sewage complaints were received.	No significant change in 1999 with failing septic systems and straight pipes remaining the 4th leading source of water pollution.
Enforcement	The Division of Water responded to 2,934 complaints, conducted 6,174 inspections, and cited 587 violations during 1999.	Losing ground in 1999 with inspections, violations and fines near record lows due to targeted enforcement of open dumpers, staff turnover and assisting communities during the drought.

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Air Quality

Indicator	Key Findings	Current Status
Ambient air concentrations	During the past two decades, Kentucky has seen a decline in the levels of pollutants in the air. All areas of the state meet the national standard for the criteria air pollutants.	Gaining ground since 1995 with a continued decline of statewide air concentrations of most of the criteria pollutants (with the exception of ground-level ozone).
Industrial air emissions	The state regulates 3,667 sources of air pollution. Trends reveal a continued decline in industrial air emissions for most of the criteria pollutants.	Gaining ground since 1995 in reducing industrial emissions of sulfur dioxide, volatile organic compounds and particulate industrial emissions.
Ground-level ozone	The state has requested that Jefferson County be redesignated attainment for ozone after air monitoring in 1998-2000 revealed compliance with the standard.	Gaining ground in 2000 with all counties in Kentucky now meeting the one-hour ozone standard. However, 25 counties will have difficulty meeting the new 8-hour ozone standard.
Nitrogen dioxide	Air concentrations in all regions of the state currently meet the air quality standard for nitrogen dioxide.	Losing ground since 1980 with a 11 percent increase in nitrogen dioxide emissions from power plants.
Sulfur dioxide	All regions of the state currently meet the sulfur dioxide air quality standard.	Gaining ground since 1980 with a 42 percent reduction of sulfur dioxide emissions from power plants.
Particulates	All regions of the state continue to meet the particulate (PM ₁₀) standard.	No significant change with all regions in compliance with the PM ₁₀ standard. However, six of the nine air control regions will have difficulty meeting the new PM _{2.5} standard.
Ozone depletion	During 1999, 15 companies released 3.83 million pounds of ozone depleting chemicals, ranking the state first in the nation in releases.	Gaining ground since 1996 with the reduction of ozone depleting chemical releases (from 7.2 million pounds in 1996 to 3.8 million pounds in 1999).
Enforcement	During 1999, 2,407 air quality complaints were received, 6,000 inspections conducted and 964 violations cited.	No significant change since 1995 with the number of air quality inspections and violations remaining steady.

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Waste Management

Indicator	Key Findings	Current Status
Solid waste generation	Kentuckians continue to generate an increasing amount of solid waste. In 1999, 4.8 million tons of waste was disposed of at landfills.	Losing ground in 1999 with Kentuckians disposing of more waste than ever before at 5.5 pounds of municipal waste per person a day.
Municipal landfills and capacity	Since 1991, 56 landfills have been closed, 20 of which have confirmed groundwater contamination. Kentucky now has 26 municipal solid waste (MSW) landfills.	Gaining ground in meeting the state's solid waste disposal needs with 26 MSW landfills now providing for 17 years of disposal capacity.
Garbage collection	All counties have passed solid waste garbage collection ordinances but most are voluntary. Only 28 counties have enacted mandatory garbage collection ordinances.	Gaining ground with 1.26 million households (80 percent of the state total) participating in a door-to-door garbage collection program—a gain of 100,000 households since 1997.
Open dumps	Since 1996, some 3,000 complaints have been made logged through the state's "report a dump" hotline. During 1999, more than 2,000 open dumps were cleaned up.	No significant change with new dumps being created everyday due to an estimated 1.5 million pounds of garbage illegally dumped each day in Kentucky.
Recycling	Most counties (106) now have recycling drop off centers and 35 have communities with door-to-door collection of recyclables.	No significant change since 1995 in the number of communities that offer door-to-door collection of recyclables.
Solid waste enforcement	There are 1,026 solid waste facilities in Kentucky. During 1999, 3,200 inspections were conducted and 723 violations cited.	Gaining ground in educating the public about proper waste disposal through the stepped up enforcement of open dumping laws.
Hazardous waste enforcement	There are 3,203 hazardous waste facilities in Kentucky. During 1999, 772 inspections were conducted and 141 violations cited.	Losing ground with the number of inspections and violations in 1999 still significantly below levels in the early 1990s.
Contaminated waste sites	Some 1,483 waste sites have been investigated of which 1,380 were contaminated. To date, 77 percent of these sites have been remediated.	No significant change with the discovery of a new contaminated site for every site cleaned up (average of 65 waste sites discovered each year compared to 68 cleaned up).

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Toxic Pollutants

Indicator	Key Findings	Current Status
Toxic chemical releases	In 1999, 366 industries reported releasing 100.8 million pounds of toxic chemicals to Kentucky's environment, 75 percent of which was to the air. Electric utilities, one of 7 new reporting industries for 1999, accounted for 59 percent of the toxic releases.	Gaining ground since 1996 with toxic releases from the original reporting industries showing declining trends (from 49 million pounds released to the environment in 1996 to 40 million pounds in 1999).
Priority toxic chemicals	In 1999, industries released 13.8 million pounds of 17 priority toxics to the environment—a 50 percent drop in releases compared to 1988.	No significant change since 1996 in the amount of 17 priority toxic chemicals released to the environment.
Spills and emergency response	Environmental incident reports have increased from an average of one a day in 1983 to a high of 11.8 a day in 1997. During 2000, an average of 8.4 reports was received each day.	Gaining ground with a drop during 1999 and 2000 in the 17-year rise of reported spills, due to the closing of old underground storage tanks, which accounted for 30 percent of the incident reports in previous years.
Agricultural chemicals	Kentucky farmers used an estimated 9 million pounds of pesticides during 1999.	No significant change during the past decade in the amount of agricultural pesticides used in Kentucky.
Pesticide residues in food	Nationwide, about 35 percent of the food tested had pesticide residues with 1.9 percent above safe levels. Tests in 1999 of food grown in Kentucky detected no pesticide residues.	No significant change since 1996 with relatively few detections of pesticide residues in foods grown in Kentucky.
Blood lead levels in children	During the past several years, on average, about 1 to 2 percent of the children tested in Kentucky had lead poisoning. Another 8 to 12 percent had lead blood levels of concern.	No significant change since 1994 in the percent of children tested by local health departments with lead poisoning.

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Natural Resources

Indicator	Key Findings	Current Status
Land use cover and patterns	The 25.6 million acres of land in Kentucky is primarily composed of farmland and forestland. Currently, 48 of the state's 120 counties and 78 communities have adopted comprehensive land use planning.	Losing ground with the conversion of an average of 109 acres a day to roads and urban areas and a majority of counties and communities still without the tools needed to address urban sprawl and land use conflicts.
Agricultural lands and products	Kentucky ranks 4th in the nation in the number of farms. Of the 91,000 farms in Kentucky, 75 percent (61,860) are considered small, ranging from one to 179 acres. Tobacco is the state's leading agricultural crop.	Losing ground with the loss of nearly 7,000 small family farms between 1992 and 1997 and the uncertain future of tobacco—Kentucky's largest cash crop.
Farmland preservation	Between 1967 and 1997, Kentucky lost 8 percent (900,000 acres) of its farmland to other uses. Efforts to protect Kentucky's best farmlands are ongoing.	Losing ground with the continued loss of farmland to other uses, including prime crop and pastureland which fell another 85,000 acres between 1992 and 1997.
Farmland conservation	An estimated 22 million tons of soil are eroded from Kentucky's croplands each year. Two million acres of cropland now use conservation tillage to reduce soil erosion rates. Nearly half of the state's farmland is still in need of erosion control measures.	Gaining ground with erosion rates on cropland declining from an average of 8.4 tons per acre per year in 1987 to 4.4 tons per acre per year in 1997.
Concentrated animal feeding operations	Kentucky has witnessed a significant increase in the number of large concentrated animal feeding operations in the state. This is being driven by the state's three chicken processing plants. Broiler production in Kentucky has increased from 22 million in 1992 to 188 million in 1999.	Gaining ground in 2000 and 2001 with the development of state rules to regulate some 250 concentrated animal feeding operations to address waste, water and other issues associated with these and other animal feeding operations. However, these rules are being legally challenged by a number of farm organizations.

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Indicator	Key Findings	Current Status
Forest resources and utilization	Kentucky is the third leading hardwood producing state in the nation. During 1997, harvesting of Kentucky's forests reached record levels at 1.1 billion board feet.	Gaining ground in 1998 with the enactment of the Ky. Forest Conservation Act and the monitoring of 1,760 logging operations since July 15, 2000.
Forest stewardship	To date, 21,623 forest plans covering 1.94 million acres have been prepared by state foresters. This represents about 16 percent of the private forestland in the state.	Losing ground in 1999 with a 29 percent decline in plans prepared by foresters (from 1,838 in 1998 to 1,304 in 1999), due to an intensive fire season, staff turnover and fewer landowners requesting services.
Forest industry	Kentucky's forest industry employs 38,000 people with a direct value of \$5.17 billion. The state's forest industry still only accounts for one percent of the nation's secondary wood industry employment.	Gaining ground since 1994 with an increase of 65 new secondary wood industries for a total of 514, adding new jobs and helping to diversify local economies.
Forest fires	For the past 10 years, Kentucky has averaged 1,447 wildfires burning 44,801 acres annually. Half of these fires are attributed to arson.	Losing ground in catching arsonists with 1,349 wildfires attributed to arson in 1999 and only 4 felony arson citations issued.
Forest health	Kentucky's forests are facing a severe southern pine beetle outbreak. Surveys have identified 311 infestations in 7 eastern Kentucky counties.	Losing ground in 2000 with 60 to 80 percent of the pine ecosystem damaged on the Daniel Boone National Forest by the southern pine beetle, resulting in thousands of acres of dead pine trees.
Tree planting and reforestation	An average of 4.4 million tree seedlings are sold each year by state-run nurseries. In 2000, 6,152 acres of land were replanted with trees and 278,098 acres regenerated naturally.	Gaining ground since 1997 with a 15 percent increase in the number of surface mine operations restoring land back to forests as a result of new state reclamation guidelines.
Urban forests	An estimated 48 percent of Kentucky's population live in metropolitan areas. Interest remains high in providing forest settings in urban communities.	Gaining ground in 1999 with 126 cities adopting urban forestry programs compared to 90 in 1998.

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Indicator	Key Findings	Current Status
Threatened and endangered species	Kentucky has 42 federally-listed threatened and endangered species. Since settlement, 45 native species have become extinct and 560 species are now considered rare in Kentucky.	Losing ground with the number of threatened, endangered and rare species continuing to climb from 34 in 1997 to 42 in 1999 and rare species increasing from 538 in 1997 to 560 in 1999.
Fish and mussels	There are 103 mussel species in Kentucky, 36 of which are considered at risk. Of the 237 native fish species in Kentucky, 61 are at risk.	Losing ground since 1997 with the addition of 6 freshwater mussels to the federal list of threatened and endangered species for a total of 20, making mussels one of the most endangered group in Kentucky.
Rare birds	Kentucky is home to an estimated 350 native species of birds, 49 of which are at risk. Habitat fragmentation and loss is the primary threat to bird populations in the state.	Losing ground during the past 33 years with 25 of the 69 bird species with valid sample sizes showing declining population trends (21 bird species increased while 23 showed no significant change).
Waterfowl and wetlands	Kentucky has lost 75 percent of its wetlands. A no-net loss policy for wetlands has resulted in the conversion of 1,433 acres of wetlands and creation of 3,229 acres since 1991.	Gaining ground with measures to protect wetlands helping to stabilize duck populations and double the resident Canada goose population from 19,670 in 1997 to 46,395 in 1999.
Bats and cave ecosystems	There are some 6,700 caves in Kentucky located in 87 counties. These caves are home to a wide variety of species including three federally-listed endangered bats in Kentucky.	Gaining ground during the past 15 years with the continuing increase in rare bat populations due the protection of caves (with the exception of the Indiana bat).
Game species	Some of the most successful wildlife restoration efforts in Kentucky have been for game species.	Gaining ground with wild turkey populations jumping from 6,750 in 1978 to 140,000 in 1999 and deer at an all time high of 693,000 in 1999.
Protection of natural areas	An estimated 1.5 million acres of land (6 percent of the state acreage) are under public ownership. About 22 percent of the state has been inventoried for unique natural areas.	Gaining ground since 1995 with the passage of the Ky. Heritage Land Conservation Act and the funding of 37 projects to protect 9,200 acres of land.

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Resource Extraction

Indicator	Key Findings	Current Status
Coal production	Since 1790, 8.1 billion tons of coal has been mined in Kentucky. During 1999, 144 million short tons were mined in the state.	No significant change during the past 15 years with coal production remaining steady, although there was a recent 8 percent drop in coal production between 1999 and 2000.
Coal mines and mining methods	The number of coal mines fell from 1,858 in 1985 to 682 in 1999. Coal production per mine has more than tripled since 1985. A majority (62 percent) of the coal is extracted using underground mining methods.	No significant change in the past several years with the continuing trend of fewer, but larger, mine operations and underground mining remaining the primary method of coal recovery in Kentucky.
Coal production waste	The safety of coal slurry impoundments rose to public attention after the failure of an impoundment near Inez, Ky. in Oct. 2000. There are 118 coal slurry impoundments in Kentucky, 20 are ranked as a high risk.	Unknown with the continuing investigation underway regarding the cause of the Martin County Coal slurry impoundment failure and an assessment of the safety of other impoundments in Kentucky.
Reclamation of coal mines	Since 1984, 612,000 acres of mine lands have been reclaimed. About half of the land is reclaimed to hay and pastureland although state efforts are underway to encourage forests as a post mining land use.	No significant change during the past several years with an average of 20,000 acres of mine land reclaimed per year.
Coal mine bond forfeitures	All coal mine operations are required to post bonds to ensure proper reclamation of sites. Kentucky currently holds \$792 million in bonds for 7,958 coal operations.	Gaining ground during the past 10 years in the number of coal mine bonds and acres forfeited due to failure to properly operate or reclaim a site. During 1999, 701 acres were forfeited compared to 8,000 acres in 1989.
Coal mine enforcement	During 1999, 26,000 coal mine inspections were conducted, 942 violations cited, and 3.3 million in penalties assessed. The number of coal mine inspections and violations have fallen significantly during the past 10 years due to a decline in the number of coal mines.	Gaining ground in 1999 with coal mine compliance reaching its highest level at 81 percent, according to random inspections by the federal Office of Surface Mining.

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Resource Extraction

Indicator	Key Findings	Current Status
Abandoned mine lands	Since 1978, the Kentucky coal industry has paid \$759 million in fees to the federal Abandoned Mine Land Reclamation Fund. Kentucky has received \$350 million in abandoned mine land reclamation grants to reclaim 20,095 acres and fund 1,300 projects. The state share balance (what is owed to the state and held in trust by Congress) was \$101 million in 2000.	Gaining ground in 1999 with the reclamation of the 250-acre Pleasant View Mine site (Ketchup Lake), at a cost of \$4 million. However, reclaiming old mine sites is a costly and slow process, with an average of only 1,000 acres of abandoned mine lands in Kentucky reclaimed each year since 1978. An estimated 80,000 to 150,000 acres of abandoned mine land are still in need of reclamation.
Oil and natural gas production	Since 1960, 90,838 oil and gas permits have been issued, of which 46,134 are productive wells. During 1999, Kentucky produced 2.8 million barrels of oil and 77 billion cubic feet of natural gas (less than 1 percent of U.S. oil and natural gas production).	No significant change in the amount of oil and natural gas produced in Kentucky. Recent hikes in natural gas and petroleum prices and growing demand are expected to increase oil and gas drilling in the state.
Oil and gas well enforcement	In 1999, 2,823 inspections of oil and gas drilling operations were conducted by the Division of Oil and Gas and 1,316 violations were cited. The Division of Water also inspects oil and gas wells. They conducted 3,924 inspections in 1999 and issued 65 violations. Water quality inspections have declined 44 percent between 1995 and 1999.	Losing ground in 1999 with a drop in oil and gas well inspections and bond forfeitures rates remaining high for failing to properly operate or reclaim a site (85 bonds forfeited in 1999 compared to 100 bonds released).
Abandoned oil and gas wells	Kentucky has an estimated 7,875 abandoned oil and gas wells that pose environmental and public safety threats. Since 1991, 1,505 abandoned oil and gas wells have been plugged.	No significant change with only 16 percent of known abandoned wells in Kentucky plugged since 1991. The state plugs about 200 wells each year, using interest accrued from oil and gas well bonds and bond forfeitures. At this rate, it will take another 40 years to plug all abandoned wells in Kentucky.

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Energy

Indicator	Key Findings	Current Status
Energy Consumption	Overall demand for energy in Kentucky has increased 64 percent since 1970. Kentucky ranks 8th in the nation in per capita energy use.	No significant change with energy consumption patterns continuing their increasing trend as seen during the past three decades.
Energy prices and expenditures	Kentuckians spent nearly \$9 billion in 1997 for energy. Transportation accounted for 35 percent of these expenditures. It is estimated that the average Kentuckians spends 5 to 15 percent on their income on energy.	Losing ground in 2000 and 2001 with the spiking of natural gas and crude oil prices after several years of stable and declining prices.
Energy and transportation	Kentuckians have doubled the number of vehicle miles driven each year since 1970. There are 3.4 million vehicles registered in the state. Kentuckians drove, on average, 12,072 miles during 1999.	Losing ground with Kentuckians driving more miles than ever before and the average yearly fuel consumption per vehicle increasing (from 520 gallons in 1990 to 538 gallons in 1999) due to the popularity of larger, less fuel efficient vehicles.
Energy efficiency and conservation	Kentucky uses 56 percent less energy to produce a dollar of gross state product in 1999 compared to 1980. During 1999, only about 34 percent of energy generated by large power plants was delivered to consumers. The rest was lost during the production and transmission process.	No significant change with the current electrical rate setting structure in Kentucky providing little incentive for consumers to conserve and use energy efficiently.